



Update on Use, Management, and Distribution of Object Identifiers for PHIN

PHIN Stakeholders Conference

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OIDs as PH Identifiers



- HL7 version 3 has embraced ISO OIDs – Object Identifiers
 - ◆ Globally unique, widely used, easily machine processable
- Structured as a well formed tree
 - ◆ HL7 root: 2.16.840.1.113883
 - ◆ CDC PHIN root: 2.16.840.1.114222.4
- CDC will use OIDs in the PHIN for:
 - ◆ Public Health Identifier Namespaces
 - ◆ Vocabulary Constructs
 - ◆ Well known objects
 - ★ Messaging partners
 - ★ Software Packages and Services
 - ◆ Enable linkage of key Public Health concepts
 - ★ Cases, specimens, results, etc.

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Characteristics of OIDs



- Identifiers in Public Health
- Consistent with HL7, ISO, ANSI, The Web
- Required by HL7 Version 3 messaging (for Coding Systems)
- Organized as a well-formed tree
- Formatted as integers separated by periods

2.16.840.1.114222.4.5.110 PH_SHIGATOXINTYPE

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OIDs – consistency with HL7

■ HL7 use of OIDs

- ◆ Identifier Namespaces
- ◆ Vocabulary Constructs
- ◆ Well known objects
 - ★ HL7 Artifacts
 - ★ HL7 Organizational Bodies
 - ★ Member Organizations

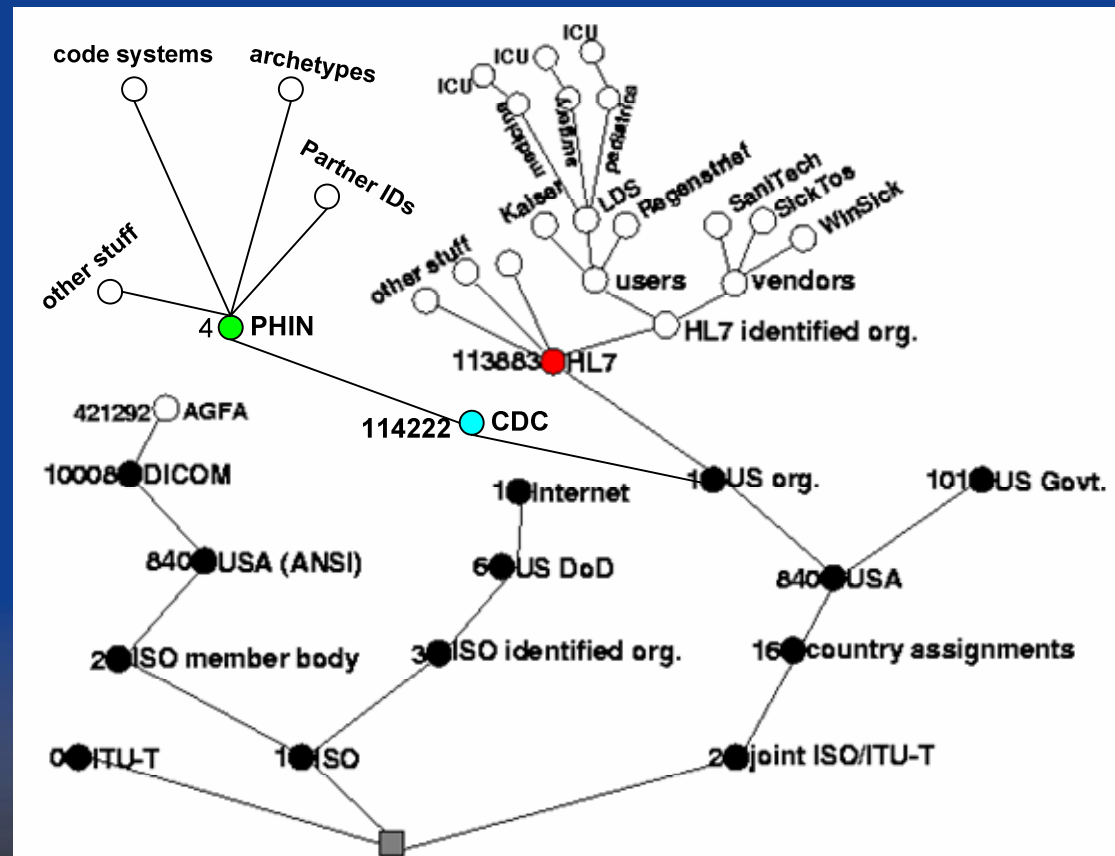
■ CDC use of OIDs

- ◆ Public Health Identifier Namespaces
- ◆ Vocabulary Constructs
- ◆ Well known objects
 - ★ Messaging partners
 - ★ Software Packages
 - ★ Public Health Organizations

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OLD Tree (tiny part)



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What does an OID identify?

- Vocabulary Constructs
 - ◆ coding systems (used in HL7 coded data types)
 - ◆ value sets
 - ◆ These OIDs are stored in the PHIN VS
- Namespaces (of identifiers)
 - ◆ Case IDs, Specimen IDs, Patient Account #s, etc.
 - ◆ Other Namespaces (local jurisdictions)
 - ◆ Analogous to 'assigning authority'
- Objects:
 - ◆ software packages implementing **Services** in the PHIN
 - ◆ organizational entities (State and Local DOH)

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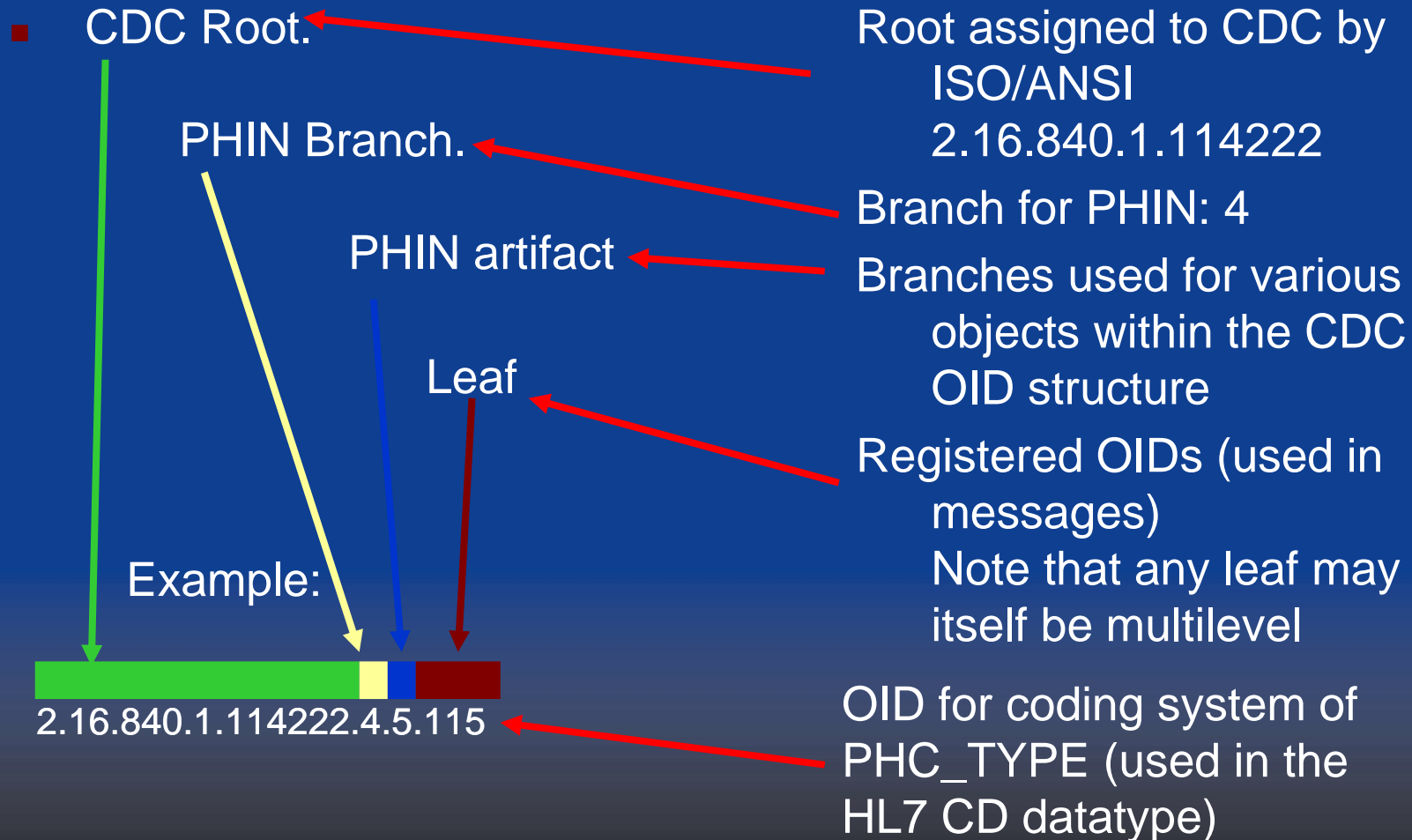


Identifiers in HL7 Messaging

- Special data type: II
 - ◆ Instance Identifier
- Has two components:
 - ◆ Root (required)
 - ◆ Extension (optional)
- May be implemented with OLDs or GUIDs (UUIDs)
 - ◆ Using OLDs requires an OLD in the root, some other value in the extension
 - ◆ The Identifier is BOTH components!



The CDC OID Structure: Vocabulary



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Identifiers and Archetypes

- Identifiers are unique only within the namespace within which they are defined and maintained
- **Archetypes** are used to construct nationally unique namespace OIDs so that data may be aggregated at the State and Federal levels
 - ◆ Pre-defined patterns that may be used independently at the State and Local level to construct globally unique namespace identifiers
 - ◆ Patterns are defined in parts of the CDC OID structure

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Branch '3' Archetypes



2.16.840.1.114222.4.3.1	Archetype for generating message ID namespaces
2.16.840.1.114222.4.3.2	Application Software Instances
2.16.840.1.114222.4.3.2.1	Laboratory Results Management and Messaging System
2.16.840.1.114222.4.3.2.2	Public Health Information Network Messaging System (ebXML transport system)
2.16.840.1.114222.4.3.2.3	Message broker software package
2.16.840.1.114222.4.3.2.4	NEDSS Base System Software OID stereotype
2.16.840.1.114222.4.3.3	root for namespace for Stakeholder-defined external software managing namespaces
2.16.840.1.114222.4.3.5	Root for namespace for software generating Order and Result Placer and Filler Numbers
2.16.840.1.114222.4.3.7	Root for namespace for software generating specimen Container ID Numbers
2.16.840.1.114222.4.3.9	Root for namespace for software generating lab Accession Numbers/Specimen IDs
2.16.840.1.114222.4.3.10	Root for namespace for software generating Notification IDs
2.16.840.1.114222.4.3.11	Root for namespace for software generating Public Health Case IDs
2.16.840.1.114222.4.3.12	Root for namespace for software generating Public Health Organization IDs. Note that these include organizations participating in the health care system, but not necessarily a messaging partner, such as those organization administering vaccinations, etc.
2.16.840.1.114222.4.3.13	Root for namespace for software generating local Hospital IDs, such as identifiers for Patients, births, etc. This namespace is essentially synonymous with the Medicare Provider ID namespace.
2.16.840.1.114222.4.3.14	Root for namespace for software generating local Person IDs; this root is used to generate the sub-roots for the different namespaces managed by the entity, such as Account numbers, different instances of Medical Record Numbers, etc.
2.16.840.1.114222.4.3.15	Root for namespace for software generating Vaccine Record IDs; these are the locally generated identifiers for individual vaccine administrations
2.16.840.1.114222.4.3.16	Root for namespace archetype for generating Local laboratory IDs (typically for a Jurisdiction)
2.16.840.1.114222.4.3.17	Root for namespace archetype for locally (jurisdiction) defined investigation IDs

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Use of the Archetype Patterns

- The Archetype defines the pattern of integers in the rightmost section of a PHIN OID
- Each State and/or local entity has their own OID
 - ◆ They may use it as their own root
 - ◆ The rightmost suffix is their integer ID
- Their integer ID together with the archetype pattern are combined to construct the unique OID for the namespace
 - ◆ Note that a namespace is really the software instance (**Service**) that assigns a unique identifier
 - ◆ {service archetype}.{site ID archetype}.
{instance number}.{namespace archetype}

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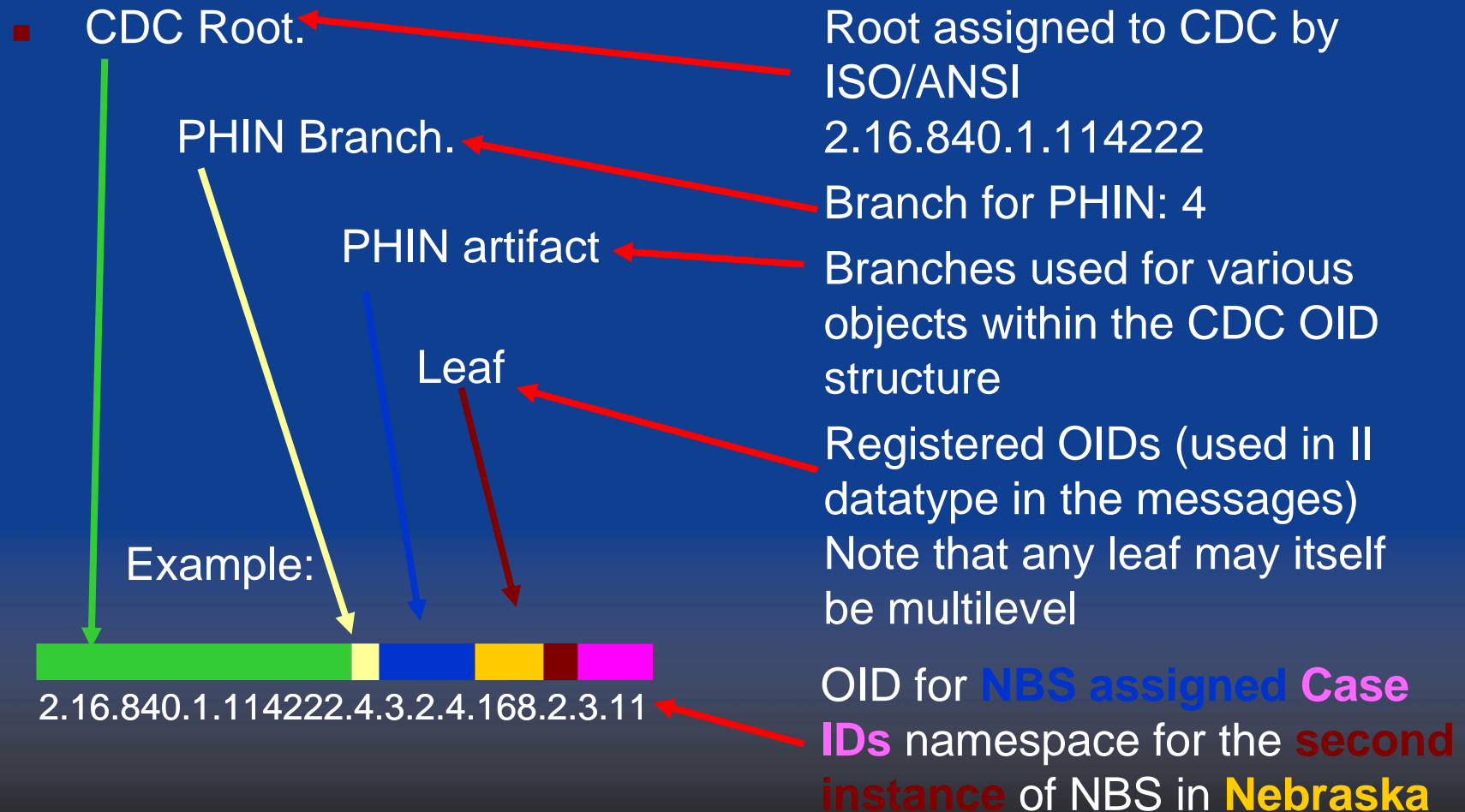
Namespaces



- Public Namespaces
 - ◆ SS#, DLN, UPIN, etc.
 - ◆ HL7 has a list in its OID registry
 - ◆ CDC will publish a list for Public Health that augments HL7
- Institutional Namespaces
 - ◆ Maintained by software specific to sites
 - ◆ Algorithms for generating the OIDs will be published in the Implementation Guides



Namespace OID (using Archetypes)



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OID Lookup



- Messaging Requirements
 - ◆ Technical addresses for routing, security, identification, etc.
 - ◆ Coding Systems and Identifier Namespaces
- Static OIDs can be published in Implementation Guides
 - ◆ Agencies, DOHs, etc.
- Dynamic OIDs must be 'looked up'
 - ◆ Events-in-progress, field teams, etc.

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OID Registry



- Project underway to implement an OID Registry at the CDC
 - ◆ Lookup tools, metadata support
 - ◆ Web-based user interface
 - ◆ Archetype generation of new OIDs
- Database containing OIDs will be made available on the PHIN website by the end of June
 - ◆ All stakeholders can look up any registered OID
 - ◆ Central place for all CDC OIDs
 - ◆ Currently a demonstration prototype can be downloaded from <http://www.tklein.com/PHresources.htm>

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Metadata for OIDs

- Use to understand OID
- Use to find an OID
- Use to find information about an OID
 - ◆ Symbolic Name
 - ◆ Description
 - ◆ Organizational associations
 - ◆ Contact persons, responsible bodies
 - ◆ Dates (creation, modification, etc.)

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Web-based User Interface

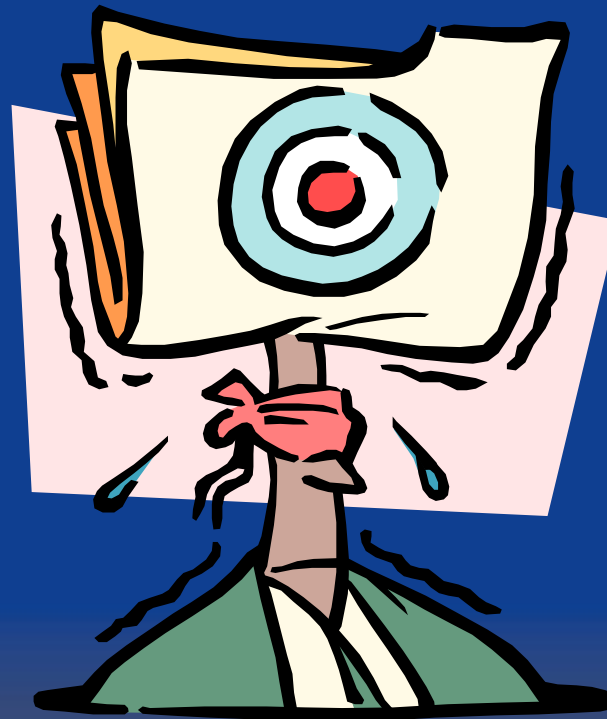


- Secure login
- Basic functions
 - ◆ Look up an OID
 - ◆ Look up metadata based on an OID
 - ◆ Register an OID
 - ◆ Create an OID based on the archetypes

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Thank You!



Questions?

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